PTO/SB/21 (09-04)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission	23

Application Number	09/755,365
Filing Date	01/05/2001
First Named Inventor	Adrian Johannes Rijnberg
Art Unit	2637
Examiner Name	Jean B. Corrielus
Attorney Docket Number	PHNL000014

ENCLOSURES *(Check all that apply)*

- [x] Fee Transmittal Form
  - [x] Fee Attached
- [ ] Amendment/Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Reply to Missing Parts/ Incomplete Application
  - [ ] Reply to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____
  - [ ] Landscape Table on CD
- [ ] After Allowance Communication to TC
- [ ] Appeal Communication to Board of Appeals and Interferences
- [x] Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [ ] Other Enclosure(s) (please Identify below):

Remarks

Enclosed is an Appeal Brief and the required fee.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	LEIMBACH ASSOCIATES		
Signature	James D. Leimbach		
Printed name	James D. Leimbach		
Date	July 18, 2006	Reg. No.	34,374

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature	James D. Leimbach		
Typed or printed name	James D. Leimbach	Date	July 18, 2006

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/17 (12-04v2)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 500.00

Complete if Known	
Application Number	09/755,365
Filing Date	01/05/2001
First Named Inventor	Adriaan Johannes Rijnberg
Examiner Name	Jean B. Corrielus
Art Unit	2637
Attorney Docket No.	PHNL000014

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☑ Deposit Account Deposit Account Number: 50-3745 Deposit Account Name: _____

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☑ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**

☑ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☑ Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
Application Type	**Fee ($)**	**Small Entity Fee ($)**	**Fee ($)**	**Small Entity Fee ($)**	**Fee ($)**	**Small Entity Fee ($)**	**Fees Paid ($)**
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims		Extra Claims	Fee ($)	Fee Paid ($)
_____	- 20 or HP =	_____	x _____	= _____

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims		Extra Claims	Fee ($)	Fee Paid ($)
_____	- 3 or HP =	_____	x _____	= _____

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims	
Fee ($)	**Fee Paid ($)**
_____	_____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets		Extra Sheets	Number of each additional 50 or fraction thereof	Fee ($)	Fee Paid ($)
_____	- 100 =	_____	/ 50 = _____ (round up to a whole number)	x _____	= _____

4. OTHER FEE(S)

	Fees Paid ($)
Non-English Specification, $130 fee (no small entity discount)	
Other (e.g., late filing surcharge): Fee for filing of Appeal Brief	500

SUBMITTED BY

Signature	James D. Leimbach	Registration No. (Attorney/Agent) 34,374	Telephone (585) 381-9983
Name (Print/Type)	James D. Leimbach		Date 07/18/2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of
Adriaan Johannes Rijnberg

TITLE: GENERATING COEFFICIENTS FOR A PREDICTION FILTER IN AN ENCODER

Serial No. 09/755,365

Filed: January 5, 2001

Confirmation No. 3887

Group Art Unit: 2637

Examiner: Jean B. Corrielus

I hereby certify that this correspondence is being deposited today with the United States Postal Services as first class mail in an envelope addressed to:
Mail Stop Appeal Brief-Patent
Commissioner for Patents
P.O. Box 1450
Alexandria VA. 22313-1450

James D. Leimbach

Name: James D. Leimbach
Registration No. 34,374
Date: July 18, 2006

Mail Stop Appeal Brief-Patent
Honorable Commissioner of Patents and Trademarks
Alexandria VA. 22313-1450

Sir:

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Real party in interest

The real party of interest is the Assignee who is U. S. Philips Corporation, a corporation existing under the laws of the State of Delaware (hereinafter Appellant).

Related appeals and interferences

There are no related appeals or interferences to the present application that are known to appellants, the appellant's legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of the Claims

Claims 1-7, 9 and 13-18 are drawn to a method and device for transmitting a digital information signal via a transmission medium. Claims 1-4, 6, 7, 13-16 and 18 are rejected and are the clams that are currently being appealed. Claims 5, 9 and 17 are objected to as being dependent upon a rejected base claim. A copy of claims 1-7, 9 and 13-18 is contained in Appendix III following this brief.

Status of the Amendments After Final

A response was filed subsequent to the final rejection to overcome the examiner's rejection of claims 1-4, 6, 7, 13-16 and 18 under d 35 U.S.C. §103(a). The examiner in an Advisory Action dated February 22, 2006 indicated that the rejections of claims 1-4, 6, 7, 13-16 and 18 under 35 U.S.C. §103(a) stand.

Summary of the Claimed Subject Matter

The appealed claims define subject matter for a method and device for transmitting a digital information signal via a transmission medium.

Appealed claim 1 defines subject matter for a transmitting device for transmitting a digital information signal via a transmission medium, including: input means (2) for receiving the digital information signal (DSD) as illustrated in Figure 1.

Appealed claim 1 defines subject matter for adaptive prediction filter means (6) as illustrates in Figure 1 adapted to derive a prediction signal from the digital information signal (DSD) in dependence on an array of prediction filter coefficients, as described on page 4, lines 10-14.

Appealed claim 1 further defines subject matter for first signal combination means (8) for combining the digital information signal (DSD) and said prediction signal so as to obtain a residual signal, as described on page 4, lines 17-18.

Appealed claim 1 further defines subject matter for encoding means (10) for encoding said residual signal so as to obtain an encoded signal, as described on page 4, lines 18-19 and lines 23-26.

Appealed claim 1 further defines subject matter for coefficient generator means (4) for generating an array of filter coefficients A[i] in response to the digital information signal (DSD), i being an integer for which it holds that $0 \leq i < p$, where p is a variable, as described in the specification on page 4, line 11-page 7, line 17.

Appealed claim 1 further defines subject matter for output means (Bit Stream output from residual encoding 10 in Figure 1) for supplying the encoded signal to an output terminal for transmission via the transmission medium as described in the specification on page 4, lines 18-28.

Appealed claim 1 further defines subject matter for smoothing means for smoothing the array of filter coefficients A[i] so as to obtain the array of prediction filter coefficients for supply to the adaptive prediction filter means is described in the specification on page 7, lines 13-17.

Appealed claim 2 defines subject matter for the transmitting device of claim 1, characterized in that the smoothing means includes low-pass filtering means for low-pass

filtering the array of filter coefficients so as to obtain the prediction filter coefficients as described in the specification on page 8, lines 17-21.

Appealed claim 3 defines subject matter for the transmitting device of claim 2, characterized in that the low-pass filtering means comprise an FIR filter as described in the specification on page 8, lines 17-21.

Appealed claim 4 defines subject matter for the transmitting device of claim 2, wherein the low-pass filtering means comprise an IIR filter as described in the specification on page 8, lines 17-21.

Appealed claim 5 defines subject matter for the transmitting device of claim 2, wherein the low pass filtering means is adapted to perform the following equations to obtain the coefficients: $C_{out}[0] = C_{in}[0]$; $C_{out}[i] = 0.25*C_{in}[i+1] + 0.5*C_{in}[i] + 0.25*C_{out}[i-1]$, whereby i is an integer and $1 \leq i \leq n-2$; $C_{out}[n-1] = C_{in}[n-1]$; $C_{in}[x]$ being coefficient number x before smoothing, and $C_{out}[x]$ being coefficient number x after smoothing is illustrates in Figure 14 and described in the specification on page 8, lines 1-12.

Appealed claim 7 defines subject matter for a method of transmitting a digital information signal via a transmission medium as described in the specification and illustrated in the figures.

Appealed claim 7 defines subject matter for receiving the digital information signal (DSD) as illustrated in Figure 1.

Appealed claim 7 further defines subject matter for deriving a prediction signal from the digital information signal (DSD) in dependence on an array of prediction filter coefficients, as described on page 4, lines 10-14.

Appealed claim 7 further defines subject matter for combining (8) the digital information signal (DSD) and said prediction signal so as to obtain a residual signal, as described on page 4, lines 17-18.

Appealed claim 7 further defines subject matter for encoding (10) said residual signal so as to obtain an encoded signal, as described on page 4, lines 18-19 and lines 23-26.

Appealed claim 7 further defines subject matter for generating (4) an array of filter coefficients A[i] in response to the digital information signal, i being an integer for which it

holds that $0 \leq i < p$, where p is a variable, as described in the specification on page 4, line 11-page 7, line 17.

Appealed claim 7 further defines subject matter for supplying the encoded signal to an output terminal (Bit Stream output from residual encoding 10 in Figure 1) for transmission via the transmission medium as described in the specification on page 4, lines 18-28.

Appealed claim 7 further defines subject matter for smoothing the array of filter coefficients A[i] so as to obtain the array of prediction filter coefficients as described in the specification on page 7, lines 13-17.

Appealed claim 13 defines subject matter for a method of transmitting information via a transmission medium, as described in the specification and illustrated in the figures.

Appealed claim 13 defines subject matter for receiving the digital information signal (DSD) as illustrated in Figure 1.

Appealed claim 13 further defines subject matter for generating a plurality of filter coefficients in response to the digital information signal (DSD), as described on page 4, lines 10-14.

Appealed claim 13 further defines subject matter for smoothing the filter coefficients to obtain a plurality of prediction filter coefficients as described in the specification on page 7, lines 13-17.

Appealed claim 13 further defines subject matter for deriving a prediction signal from the digital information signal (DSD) in dependence on the filter coefficients, as described on page 4, lines 10-14.

Appealed claim 13 further defines subject matter for combining (8) the digital information signal (DSD) and the prediction signal to obtain a residual signal, as described on page 4, lines 17-18.

Appealed claim 13 further defines subject matter for encoding (10) said residual signal to obtain an encoded signal, as described on page 4, lines 18-19 and lines 23-26.

Appealed claim 13 further defines subject matter for supplying the encoded signal to the transmission medium (Bit Stream output from residual encoding 10 in Figure 1) as described in the specification on page 4, lines 18-28.

Grounds of Rejection to be Reviewed on Appeal

The Advisory Action dated February 22, 2006 indicated that the rejections to claim 1-4, 6, 7, 13-16 and 18 stand. Claims 1-4, 6, 7, 13-16 and 18 are the appealed claims. Appealed claims 1, 7 and 13 are rejected under the provisions of 35 U.S.C. §103(a) has being obvious over the admitted prior art on page 1, lines 1-24 of the specification to the present invention in view of U.S. Patent No. 5,495,556 issued in the name of Honda (hereinafter referred to as *Honda*). Appealed claims 2-4, 6, 14-16 and 18 are rejected under the provisions of 35 U.S.C. §103(a) has being obvious over the admitted prior art on page 1, lines 1-24 of the specification to the present invention in view *Honda* and further in view of U.S. Patent No. 4,777,620 issued in the name of Shimoni et al. (hereinafter referred to as *Shimoni et al.*).

Argument

I. The rejection of appealed claims 1, 7 and 13 are rejected under the provisions of 35 U.S.C. §103(a) has being obvious over the admitted prior art on page 1, lines 1-24 of the specification to the present invention in view of *Honda*

A. The rejection under 35 U.S.C. S 103(a)

Appealed claims 1, 7 and 13 are rejected under the provisions of 35 U.S.C. §103(a) has being obvious over the admitted prior art on page 1, lines 1-24 of the specification to the present invention in view of U.S. Patent No. 5,495,556 issued in the name of Honda (hereinafter referred to as *Honda*).

The MPEP at §2143 states that to "establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination

and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."

The MPEP at §2143.01 discusses the requirement for finding a suggestion or motivation to modify the references and quotes the court in stating that the "mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

The MPEP at §2143.01 further cities *In re Mills*, and states that although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." (916 F.2d at 682, 16 USPQ2d at 1432.).

B. The references

The description on page 1 of the specification does not teach or suggest smoothing means for smoothing the array of filter coefficients A[i] so as to obtain the array of prediction filter coefficients for supply to the adaptive prediction filter means.

Honda (U.S. Patent No. 5,495,556) relates to speech synthesizing (see Title). *Honda* teaches a smoothing part 35 that provides coefficients for the equalization filter 37. *Honda* derives a prediction residual e(t) from the inverse filter 31. Prediction coefficients a_i, are supplied to the inverse filter 31. There is no disclosure or suggestion within *Honda* to smooth the prediction coefficients a_i that are supplied to the inverse filter 31. *Honda* teaches smoothing of the phase-equalization coefficients. It should be noted that while *Honda* teaches creation of a prediction signal that uses prediction coefficients, *Honda* only teaches smoothing of the coefficients used for phase-equalization coefficients. *Honda* makes no disclosure or suggestion that would lead a person skilled in the art to smooth the prediction coefficients a_i that are supplied to the inverse filter 31 (see FIG. 2, col. 4, lines 1-39).

The smoothing of phase-equalization coefficients taught by *Honda* is not equivalent to the smoothing of the prediction coefficients. *Honda* teaches creation of a prediction filter but provides no teaching that would lead a person skilled in the art to smooth the

prediction coefficients that are used by the prediction filter. *Honda* does not disclose or suggest smoothing of the prediction coefficients.

C. The differences between the invention and the references

Appealed claims 1, 7 and 13 stand rejected by the Final Office Action under the provisions of 35 USC §103(a) as being obvious over Applicants' discussion on page 1 of the specification as originally filed in view of U.S. Patent No. 5,495,556 issued in the name of Honda (hereinafter *Honda*). The examiner's position is that it would have been obvious for a person of ordinary skill within the art to combine the discussion on page 1 of the specification with *Honda* to create the subject matter defined by the rejected claims.

The examiner alleges that it would have been obvious for a person of ordinary skill within the art to apply the smoothing part 35 as taught by *Honda* to the description on page 1 of the specification to the present invention to create the subject matter defined by the appealed claims. The appealed claims define subject matter for adaptive prediction filter means adapted to derive a prediction signal from the digital information signal in dependence on an array of prediction filter coefficients, and smoothing means for smoothing the array of filter coefficients A[i] so as to obtain the array of prediction filter coefficients for supplying the adaptive prediction filter means. *Honda* teaches a smoothing part 35 that provides coefficients for the equalization filter 37. The appellants, respectfully, point out that *Honda* derives a prediction residual e(t) from the inverse filter 31. Prediction coefficients a_i are supplied to the inverse filter 31. The combination made in rejection fails to provide all the elements defined by the rejected claims. There is no disclosure or suggestion within *Honda* to smooth the prediction coefficients a_i supplied to the inverse filter 31. *Honda* teaches smoothing of the phase-equalization coefficients. It should be noted that while *Honda* teaches creation of a prediction signal that uses prediction coefficients, *Honda* only teaches smoothing of the coefficients used for phase-equalization coefficients. *Honda* makes no disclosure or suggestion that would lead a person skilled in the art to smooth the prediction coefficients a_i supplied to the inverse filter 31 (see FIG. 2, col. 4, lines 1-39).

The appellants, respectfully, submit that the smoothing of phase-equalization coefficients taught by *Honda* is not equivalent or suggestive of smoothing the prediction coefficients as defined by the appealed claims. The rejection alleges that *Honda* teaches smoothing means 35 for smoothing the array of filter coefficients. *Honda* does not disclose or suggest smoothing of the prediction coefficients as defined by the rejected claims. *Honda* teaches creation of a prediction filter but provides no teaching that would lead a person skilled in the art to smooth the prediction coefficients that are used by the prediction filter.

The MPEP at §2143.01 discusses the requirement for finding a suggestion or motivation to modify the references and quotes the court in stating that the "mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). The MPEP at §2143.01 further citiesg *In re Mills*, and states that although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." (916 F.2d at 682, 16 USPQ2d at 1432.). The rejection alleges obviousness and reaches conclusion of obviousness by modifying *Honda* to alter the smoothing of phase-equalization coefficients as taught by *Honda* into the smoothing of the prediction coefficients as defined by the rejected claims. The modification of *Honda* that is made within the rejection is made without any suggestion or motivation within *Honda* for making the modification.

Appealed claim 1

Appealed claim 1 defines subject matter for smoothing means for smoothing the array of filter coefficients A[i] so as to obtain the array of prediction filter coefficients for supply to the adaptive prediction filter means. There is no disclosure or suggestion within the prior art discussed on page 1 of the specification to the present invention or *Honda*, either alone or in combination, for smoothing the array of filter coefficients A[i] so as to obtain the array of prediction filter coefficients for supply to the adaptive prediction filter means.

Appealed claim 7

Appealed claim 7 defines subject matter for smoothing the array of filter coefficients A[i] so as to obtain the array of prediction filter coefficients. There is no disclosure

or suggestion within the prior art discussed on page 1 of the specification to the present invention or *Honda*, either alone or in combination, for smoothing the array of filter coefficients A[i] so as to obtain the array of prediction filter coefficients for supply to the adaptive prediction filter coefficients.

Appealed claim 13

Appealed claim 13 defines subject matter for smoothing the filter coefficients to obtain a plurality of prediction filter coefficients. There is no disclosure or suggestion within the prior art discussed on page 1 of the specification to the present invention or *Honda*, either alone or in combination, for smoothing the filter coefficients to obtain the array of prediction filter coefficients.

II. The rejection of appealed claims 2-4, 6, 14-16 and 18 are rejected under the provisions of 35 U.S.C. §103(a) has being obvious over the admitted prior art on page 1, lines 1-24 of the specification to the present invention in view of *Honda* and further in view of *Shimoni et al.*

A. The rejection under 35 U.S.C. S 103(a)

Appealed claims 2-4, 6 and 14-16 stand rejected by the Final Office Action under the provisions of 35 USC §103(a) as being obvious over the admitted prior art on page 1, lines 1-24 of the specification to the present invention in view *Honda* and further in view of *Shimoni et al.* (U.S. Patent No. 4,777,620).

The MPEP at §2143 states that to "establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination

and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."

The MPEP at §2143.01 discusses the requirement for finding a suggestion or motivation to modify the references and quotes the court in stating that the "mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

The MPEP at §2143.01 further cities *In re Mills*, and states that although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." (916 F.2d at 682, 16 USPQ2d at 1432.).

B. The references

The description on page 1 of the specification does not teach or suggest smoothing means for smoothing the array of filter coefficients A[i] so as to obtain the array of prediction filter coefficients for supply to the adaptive prediction filter means.

Honda (U.S. Patent No. 5,495,556) relates to speech synthesizing (see Title). *Honda* teaches a smoothing part 35 that provides coefficients for the equalization filter 37. *Honda* derives a prediction residual e(t) from the inverse filter 31. Prediction coefficients a_i, are supplied to the inverse filter 31. There is no disclosure or suggestion within *Honda* to smooth the prediction coefficients a_i that are supplied to the inverse filter 31. *Honda* teaches smoothing of the phase-equalization coefficients. It should be noted that while *Honda* teaches creation of a prediction signal that uses prediction coefficients, *Honda* only teaches smoothing of the coefficients used for phase-equalization coefficients. *Honda* makes no disclosure or suggestion that would lead a person skilled in the art to smooth the prediction coefficients a_i that are supplied to the inverse filter 31 (see FIG. 2, col. 4, lines 1-39).

The smoothing of phase-equalization coefficients taught by *Honda* is not equivalent to the smoothing of the prediction coefficients. *Honda* teaches creation of a prediction filter but provides no teaching that would lead a person skilled in the art to smooth the prediction coefficients that are used by the prediction filter. *Honda* does not disclose or suggest smoothing of the prediction coefficients.

Shimoni et al. relate to a data compression system (see Title). *Shimoni et al.* teach data compression and expansion for improving the signal to noise ratio while retaining fidelity by using a filter that can be separated into a smoothing portion and an enhancing portion. The smoothing portion is used prior to decreasing (compressing) data (see Abstract). *Shimoni et al.* teach that low pass filters (smoothing filters) can be used to reduce the high frequency content in data (see col. 1, line 66-col. 2, line 2). Note that there is no disclosure or suggestion generating an array of filter coefficients in response to the digital information signal or any smoothing the array of filter coefficients so as to obtain the array of prediction filter coefficients for supply to the adaptive prediction filter within *Shimoni et al.* It should further be noted that there is no disclosure or suggestion for implementing a FIR or an IIR filter as a low pass filter within *Shimoni et al.*

C. The differences between the invention and the references

The rejection alleges that it would be obvious for a person skilled in to implement a low pass filter, an FIR filter, or an IIR filter as defined by the appealed claims. The appellants, respectfully, point out that the appealed claims define subject matter for smoothing the prediction coefficients that are used by the prediction filter. There is no disclosure or suggestion within *Shimoni et al.* for the smoothing the prediction coefficients used by the prediction filter. The low pass filter discussed by *Shimoni et al.* is not used to smooth the prediction coefficients used by a prediction filter.

Appealed claim 2

Appealed claim 2 defines the subject matter of appealed claim 1, characterized in that the smoothing means includes low-pass filtering means for low-pass filtering the array of filter coefficients so as to obtain the prediction filter coefficients. There is no disclosure or suggestion within *Shimoni et al.*, the prior art discussed on page 1 of the specification to the present invention or *Honda*, either alone or in combination, for the subject matter of appealed claim 1 characterized in that the smoothing means includes low-pass filtering means for low-pass filtering the array of filter coefficients so as to obtain the prediction filter coefficients.

Appealed claim 3

Appealed claim 3 defines the subject matter of appealed claim 2, characterized in that the low-pass filtering means comprise an FIR filter. There is no disclosure or suggestion within *Shimoni et al.*, the prior art discussed on page 1 of the specification to the present invention or *Honda*, either alone or in combination, for the subject matter of appealed claim 2, characterized in that the low-pass filtering means comprise an FIR filter.

Appealed claim 4

Appealed claim 4 defines the subject matter of appealed claim 2, characterized in that the low-pass filtering means comprise an IIR filter. There is no disclosure or suggestion within *Shimoni et al.*, the prior art discussed on page 1 of the specification to the present invention or *Honda*, either alone or in combination, for the subject matter of appealed claim 2, characterized in that the low-pass filtering means comprise an IIR filter.

Appealed claim 6

Appealed claim 6 defines the subject matter of any of appealed claims 1-5, characterized an arrangement for writing the encoded signal on a record carrier. There is no disclosure or suggestion within *Shimoni et al.*, the prior art discussed on page 1 of the specification to the present invention or *Honda*, either alone or in combination, for the subject matter of any of appealed claims 1-5, characterized an arrangement for writing the encoded signal on a record carrier.

Appealed claim 14

Appealed claim 14 defines the subject matter of appealed claim 13, wherein smoothing further comprises low-pass filtering of the filter coefficients to obtain the prediction filter coefficients. There is no disclosure or suggestion within *Shimoni et al.*, the prior art discussed on page 1 of the specification to the present invention or *Honda*, either alone or in combination, for the subject matter of appealed claim 14, wherein smoothing further comprises low-pass filtering of the filter coefficients to obtain the prediction filter coefficients.

Appealed claim 15

Appealed claim 15 defines the subject matter of appealed claim 14, wherein the low-pass filtering comprises an FIR filter. There is no disclosure or suggestion within *Shimoni et al.*, the prior art discussed on page 1 of the specification to the present invention or *Honda*, either alone or in combination, for the subject matter of appealed claim 14, wherein in that the low-pass filtering means comprise an FIR filter.

Appealed claim 16

Appealed claim 16 defines the subject matter of appealed claim 14, wherein the low-pass filtering comprises an IIR filter. There is no disclosure or suggestion within *Shimoni et al.*, the prior art discussed on page 1 of the specification to the present invention or *Honda*, either alone or in combination, for the subject matter of appealed claim 14, wherein the low-pass filtering comprises an IIR filter.

Appealed claim 18

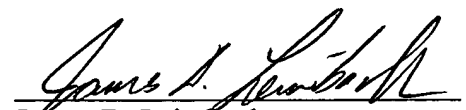
Appealed claim 16 defines the subject matter of appealed claim 14, wherein generating comprises generating an array of filter coefficients and smoothing comprise smoothing the filter coefficients to obtain an array of prediction filter coefficients. There is no disclosure or suggestion within *Shimoni et al.*, the prior art discussed on page 1 of the specification to the present invention or *Honda*, either alone or in combination, for the subject matter of appealed claim 14, wherein generating comprises generating an array of filter coefficients and smoothing comprise smoothing the filter coefficients to obtain an array of prediction filter coefficients

Conclusion

In summary, the examiner's rejections of the claims are believed to be in error for the reasons explained above. The rejections of each of claims 1-4, 6, 7, 13-16 and 18 should be reversed.

The Commissioner is authorized to charge fees associated with the filing of this brief to Account No. 50-3745 including any underpayments, excluding the payment of any issue fees, and to credit any overpayments to the same account.

Respectfully submitted,



James D. Leimbach
Attorney for Appellants
Registration No. 34,374

Telephone: 585-381-9983
Facsimile: 585-381-9983

APPENDIX I. Evidence on Appeal

"None"

APPENDIX II. Related Proceedings

"None"

APPENDIX III. Claims on Appeal

1. A transmitting device for transmitting a digital information signal via a transmission medium, including:

- input means for receiving the digital information signal,
- adaptive prediction filter means adapted to derive a prediction signal from the digital information signal in dependence on an array of prediction filter coefficients,
- first signal combination means for combining the digital information signal and said prediction signal so as to obtain a residual signal,
- encoding means for encoding said residual signal so as to obtain an encoded signal,
- coefficient generator means for generating an array of filter coefficients A[i] in response to the digital information signal, i being an integer for which it holds that $0 \leq i < p$, where p is a variable,
- output means for supplying the encoded signal to an output terminal for transmission via the transmission medium, and
- smoothing means for smoothing the array of filter coefficients A[i] so as to obtain the array of prediction filter coefficients for supply to the adaptive prediction filter means.

2. The transmitting device of claim 1, characterized in that the smoothing means includes low-pass filtering means for low-pass filtering the array of filter coefficients so as to obtain the prediction filter coefficients.

3. The transmitting device of claim 2, characterized in that the low-pass filtering means comprise an FIR filter.

4. The transmitting device of claim 2, characterized in that the low-pass filtering means comprise an IIR filter.

5. The transmitting device of claim 2, characterized in that the low pass filtering means is adapted to perform the following equations to obtain the coefficients:

$C_{out}[0] = C_{in}[0]$,

$C_{out}[i] = 0.25*C_{in}[i+1] + 0.5*C_{in}[i] + 0.25*C_{out}[i-1]$, whereby i is an integer and $1 \leq i \leq n-2$,

$C_{out}[n-1] = C_{in}[n-1]$,

$C_{in}[x]$ being coefficient number x before smoothing, and $C_{out}[x]$ being coefficient number x after smoothing.

6. The transmitting device of any one of the preceding claims, comprises an arrangement for writing the encoded signal on a record carrier.

7. A method of transmitting a digital information signal via a transmission medium, comprising:

- receiving the digital information signal,
- deriving a prediction signal from the digital information signal in dependence on an array of prediction filter coefficients,
- combining the digital information signal and said prediction signal so as to obtain a residual signal,
- encoding said residual signal so as to obtain an encoded signal,
- generating an array of filter coefficients A[i] in response to the digital information signal, i being an integer for which it holds that $0 \leq i < p$, where p is a variable,
- supplying the encoded signal to an output terminal for transmission via the transmission medium, and
- smoothing the array of filter coefficients A[i] so as to obtain the array of prediction filter coefficients.

9. The method of claim 7 wherein:

the smoothing includes low-pass filtering the array of filter coefficients A[i] so as to obtain the prediction filter coefficients;

the low-pass filtering is selected between one or more of: FIR filtering and IIR filtering;

the low pass filtering applies the following equations to obtain the prediction filter coefficients: Cout[0] = Cin[0]; Cout[i] = 0.25*Cin[i+1] + 0.5*Cin[i] + 0.25*Cout[i-1], whereby i is an integer and $1 \leq i \leq n-2$; Cout[n-1] = Cin[n-1], Cin[x] being coefficient number x before smoothing., and Cout[x] being coefficient number x after smoothing;

supplying the encoded signal includes writing the encoded signal on a record carrier.

13. A method of transmitting information via a transmission medium, comprising:

receiving a digital information signal;

generating a plurality of filter coefficients in response to the digital information signal,

smoothing the filter coefficients to obtain a plurality of prediction filter coefficients

deriving a prediction signal from the digital information signal in dependence on the filter coefficients,

combining the digital information signal and the prediction signal to obtain a residual signal,

encoding said residual signal to obtain an encoded signal,

supplying the encoded signal to the transmission medium.

14. The method of claim 13, wherein smoothing further comprises low-pass filtering of the filter coefficients to obtain the prediction filter coefficients.

15. The method claim 14, wherein the low-pass filtering comprises an FIR filter.

16. The method claim 14, wherein the low-pass filtering comprises an IIR filter.

17. The method of claim 14, wherein the low pass filtering is adapted to perform the following equations to obtain the coefficients:

$C_{out}[0] = C_{in}[0]$,

$C_{out}[i] = 0.25*C_{in}[i+1] + 0.5*C_{in}[i] + 0.25*C_{out}[i-1]$, whereby i is an integer and $1 \leq i \leq n-2$,

$C_{out}[n-1] = C_{in}[n-1]$,

$C_{in}[x]$ being coefficient number x before smoothing, and $C_{out}[x]$ being coefficient number x after smoothing.

18. The method of claim 14, wherein generating comprises generating an array of filter coefficients and smoothing comprise smoothing the filter coefficients to obtain an array of prediction filter coefficients